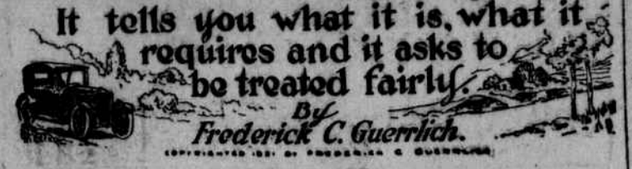
The Automobile Speaks



Number 30.
THE CARBURETER.

I have told you that three things were essential to the proper running of my engine: namely, compression, ignition and mixture.

The device upon which the proper mixture of the fuel, and also its proper vaporization depends, is the carbureter.

The gasolene used to give my engine its power comes as a liquid, but in order for it to explode properly it must first be converted into a gas, or at worst a fine spray or mist. It must also be mixed with the correct quantity of air, as it is the oxygen in the air which causes the burning. It is the function of the carbureter to accomplish this.

To clearly understand the action of the carbureter I will first have to tell you of some of the simple chemical and physical laws upon which its action is based.

Mixtures.

Scientists call the smallest particle of which all matter—wood, iron, water, air—is composed the molecule. Thus a drop of water is composed of millions of molecules, as is the germ which is so small as not to be visible under the strongest microscope.

The chemist works with these molecules. He divides them into what he calls atoms, and rejoins these atoms into other combinations. Thus each molecule of water is composed of two atoms of hydrogen and one of oxygen, and each molecule of gasolene is composed of eight atoms of carbon and eighteen of hydrogen or thereabouts, depending upon its grade. A chemist can divide the gasolene molecules into their elements or atoms; that is, carbon and hydrogen, and then make the carbon combine with some atoms of oxygen, and the hydrogen atoms with other atoms of oxygen, and so change the gasolene into what is known as carbon dioxide gas, and into water.

These atoms or elements of which molecules are made are much like human beings in that they like to be combined or in company with certain elements more than with others. Thus most elements like to combine with oxygen, while few will readily combine with nitrogen. Carbon and hydrogen, of which gasolene is composed, get along well together, but the carbon would rather be combined with the oxygen than with the hydrogen, and the hydrogen would also rather be combined with the oxygen than with the carbon.

If you bring a number of molecules of gasolene, made up of atoms of hydrogen and carbon, in contact with a number of molecules of oxygen they will, when given the slightest reason, separate and combine with the oxygen. Heat, as from an electrical spark, will be such a reason, so that if you have a vessel containing a mixture of gasolene and oxygen molecules and yet set a spark to them the carbon in the gasolene will separate from its hydrogen and combine with the oxygen, each atom of the carbon combining with two atoms of oxygen and thus making (CO_2) carbon dioxide gas, while two of the atoms of hydrogen will combine with one of oxygen and make (H_2O) water.

When elements combine as above great heat is generated. We call the decomposition or separating and recombining of the elements in the above way combustion, or we say, "they burn." An explosion is an instantaneous combustion.

From the above you can see why the mixture must be in a definite ratio of oxygen or air (as we get the oxygen from the air) and gasolene; as for each atom of carbon there must be two atoms of oxygen, and for each two atoms of hydrogen one of oxygen. If there be an excess of either gas or air the excess will make the amount of heat and pressure given out small, and may even, by absorbing the heat from the spark, prevent the combustion entirely.

Molecules made up of certain elements will always want to get away from one another, as is the case with the oxygen and nitrogen molecules of the air. Thus we have a gas, air technically being a gas. Others, such as those of iron, copper, wood, &c., will want to get together and will hold to one another very firmly, giving us a solid mass, while still others, such as those of water, will have a slight attraction for one another, and so we have a liquid.

The holding together power of like molecules is called cohesion, and that of unlike, such as glue to wood, oil to steel, is called adhesion.

The cohesion is effected by the temperature. Thus water will be in the liquid state when between 32 and 212 degrees Fahrenheit, but will be a solid—ice and snow—at temperatures below this, while it will be a gas—steam—at temperatures above 212 degrees. Even copper and iron will, when the temperature is raised high enough, melt or become liquids and in time gas. Gasolene (depending upon its grade) will change from a liquid to a gas in the neighborhood of 70 degrees. Kerosene will have to have a much higher temperature.

The pressure above the liquid will affect the temperature at which it will change to a gas. Thus water will change to steam when the pressure is that of the atmosphere, but if the pressure be higher the temperature will have to be raised.

On the other hand, if the pressure be less than atmosphere, or a vacuum, the water will turn to steam at a temperature less than 212 degrees.

What is true of steam is true of gasolene, and the fact that the gasolene will change to a gas at about 70 degrees, which is perhaps the average temperature of the air, and the fact that due to the suction stroke of the engine there is a vacuum in the manifold, thus making the temperature of evaporation even lower, makes it possible to use gasolene as a fuel for the engine. The higher temperature which kerosene requires makes it impractical without the use of a heater.

We want an explosion or instantaneous combustion in the cylinder. In order to get this every molecule of the gas should be in contact or very close to a molecule of oxygen. Thus the gasolene must get into the cylinder in the form of a gas or at worst a fine fog or mist, and be thoroughly mixed with the air. To accomplish this is the purpose of the carbureter. Thus the definition of a carbureter is: A device for changing the liquid gasolene into a gas or mist, and to mix it with the correct amount of air to cause an instantaneous combustion or explosion.

COODRICH BRINGS OUT SEMI-PNEUMATIC TIRE

The B. F. Goodrich Rubber Company has put a new truck tire on the market. It is the semi-pneumatic truck tire and is exactly what its name implies. Possessing solid tire characteristics it has to an exceptional degree the resilience and cushioning qualities of a pneumatic truck tire. It is not a cushion tire; it is something more than a cushion tire. By virtue of its unique design it possesses to so great a degree the ability of a properly inflated cord truck tire that this unique quality deserved more recognition than was suggested by the name cushion, hence the name semi-pneumatic.

The outside design of the tire is in every respect as effective as the internal design. A groove is molded in the tread for its entire circumference. This groove helps to prevent skidding. In addition there are a number of side blocks on the tread, designed to give traction in soft going. The side slots between the blocks add to the resiliency of the tire, and by breaking up and reducing the tractional wave materially reduce gasolene consumption.

Not the least important feature of this tire is the fact that the tire fits the standard S. A. E. wheel and that the regular solid tire press serves to apply the tire, eliminating all extra flanges and bolts and screws and special wheels, all of which add to the initial cost and increases the unsprung weight of the truck, which is uneconomical.

The addition of the semi-pneumatic tire completely rounds out the Goodrich motor truck tire line. The line includes a type of tire for every motor trucking purpose conceivable.

The new tire is now on display at the local branch of the B. F. Goodrich Rubber Company at Broadway and Fifty-seventh street.

NEW ESSEX SHOWROOM ATTRACTS BIG CROWDS

The opening of the new Essex salesroom at the corner of Broadway and Sixty-third street on Columbus Day created quite a flurry in the local automobile trade.

While, of course, the large majority of the attendance was composed of Essex owners and their friends, over fifty of the most prominent dealers and salesmen in the local motor car trade dropped in during the day to look the salesroom over.

They are enthusiastic over the beauty and utility of the room, and President Harry Houpt of the Hudson Motor Car Company was congratulated again and again on the unique treatment and decorations of the room which was proclaimed as the most beautiful salesroom in New York.

WOULD REGULATE DRIVING SIGNALS

Poertner Makes Valuable Suggestions to Regulate Traffic.

Very many automobile accidents are caused by misunderstood traffic signals. The misunderstanding comes about largely because there is no standard code of signals. Most automobilists indicate what they are going to do—that is, when they really do give a signal—according to their own ideas of what a signal should be. There is real need for the Police Department to issue a special ruling on signals for driving and, in the opinion of William C. Poertner, former president of the Automobile Dealers Association, "this would be a great relief to the general motorist, and would in many cases absolve him from blame for accidents."

Mr. Poertner, head of the Poertner Motor Car Company, has offered several suggestions regarding traffic regulation that have been much appreciated by the Police Department. His latest idea is offered because, as he says, the average motor car driver in signalling does so in a manner that the driver behind him has no idea of which way he is going, whether it be to the right or left, or whether he is going to stop entirely.

"If a driver intends to turn left he should indicate by putting out his hand, with the index finger pointing very clearly to the left," says Mr. Poertner. "If he is going to turn right he should put out his hand so that it can be seen from the rear and should move it forward in a circle. No driver should give a left hand turn signal when he means to go right, and, above all, should never signal so that traffic behind him will come along to his left if he intends to go left himself.

"The 'stop' signal is simply to put out one's hand, keeping it horizontally extended."

The suggestion of a definite code of driving signals, as offered by the National, Durant and Scripps-Booth distributer, is backed up further by Mr. Poertner, who says that if a particular form were adopted the Poertner Motor Car Company would start a school for the purpose of instructing its customers without charge.

WILLS ST. CLAIRE FORCE IS WORKING OVERTIME

Practically all production departments of C. H. Wills & Company are now working overtime in order to meet demands being made on the company from all over the country for the three models of the Wills Sainte Claire motor car now being produced.

There are now approximately 1,000 men employed in the factory, and at least two-thirds of this number are working until 7 and 9 o'clock every day in the week, including Sundays, in order to turn out the cars for which dealers have orders. The production includes the touring car, roadster and the new coupe model, the first one of which was turned out last week. By October 15 the five passenger sedan will be in production and for this there is a large number of orders on file.

Because of the rapidly increasing demand for the Wills Sainte Claire the country over, the production schedule will be increased each successive month from now on. There are now twenty-one distributers selling Wills Sainte Claire cars in the United States.

Auto Row Close-Ups

Capt. C. M. Armstrong, well known for his work abroad with the Motor Transport Corps, has joined the sales force of the A. Elliott Ranney Company, which sells the Daniels eight.

The many friends of C. R. Keesling, who, with his brother, sells the Davis car in this territory, will be pleased to know that he is well on the way to recovery after a serious operation.

Master William Poertner, two-year-old son of the well know distributer of National, Scripps-Booth and Durant cars, witnesed the last world series baseball game with his parents. When asked for some comment on the game he said: "Look at my new gloves."

C. E. T. Scharpa, long associated with New York newspapers as automobile editor, has joined the sales and promotion department of the Poertner Motor Car Company. "What do you mean by newspaper circulation?" he asked the other day. "The circulations I am particularly interested in now have to do with the Durant car's water system and the flow of money from people's pockets to our cash drawer."

S. H. Kelley, well known in the trade, has been appointed district representative of eastern territory for the Premier Motor Car Company.

Harry Houpt is being congratulated on his new Essex showroom because first, last and all the time Harry is an artist.

MRS. LUESCHER WINS DORT CAR IN CONTEST

That Mrs. Mark Luescher is the most popular woman motorist in New York was decided by the thousands of voters who cast their ballot for her in the contest held by the Dort Motor Car Company. The Dort coupe, which was the prize to be awarded to the winner, was presented to Mrs. Luescher on Friday afternoon by a citizens' committee consisting of Ray Long, editor-in-chief of the *International Magazine* company, Alexander Johnston, editor *Motor Magazine;* Hudson Maxim, Elsie Janis, Commissioner Enright, Louis Joseph Vance, author of "Alias the Lone Wolf," and Roy Carruthers, director-general of the Waldorf-Astoria, who made the presentation on behalf of J. D. Dort, president of the Dort Motor Car Company. The popular interest which has been aroused by the contest, in which thirty actresses, artists and writers were contestants, came to a climax on Friday afternoon at the ceremony of award.

Mrs. Luescher, who won the Dort coupe, was presented with gifts made by a number of prominent commercial organizations whose cooperation was evoked by the public enthusiasm in the contest. The Dort coupe as finally presented to Mrs. Luescher contained a Hylo bumper, a spare tire presented by the Miller Rubber Company, a seal leather vacuum bottle, gift of the Stanley Insulating Company, and a Boyce motometer. Putnam's presented Mrs. Luescher with "The Cruise of the Kawa," their popular book of the season, and Thomas F. Galvin, the florist, was the donor of a large bouquet of flowers. The United States Radium Corporation installed in the car a radium gasolene gauge by which Mrs. Luescher will be able to determine how much gas is in the tank at night without the use of artificial light.

Among the men and women who have announced that their votes were cast for Mrs. Luescher are Commissioner Enright, Elsie Janis, David Warfield, Alexander Black, a group of the Knights of Columbus, three elephants, a trained crow, Charlotte of the Hippodrome, Mayor Hylan and Beatrice Fairfax.

LATEST MOTOR TOURING INFORMATION

The bureau of tours of the Automobile Club of America gives valuable road notes and touring information on trunk lines around New York.

The bridge across the Raritan River between Perth Amboy and South Amboy has been reopened for traffic.

There is construction work and a detour on the Lincoln Highway on Rahway avenue between Elizabeth and Rahway. Construction work on the Lincoln Highway between Trenton and Philadelphia that has been going on all summer has not been finished and motorists are going from Trenton up along the river to Yardley then over a parallel road through Newtown to Philadelphia.

Motorists can go to Philadelphia over all good road, which is somewhat longer, by going down through Freehold to Lakewood, then via New Egypt, Wrightstown, Mount Holly and Moorestown to Camden.

The short route to the Delaware Water Gap is now opened and is good most of the way via Newark, Springfield, Morristown, Bernardsville and Far Hills to Chester, then over Schooleys Mountain through Hackettstown and Bridgeville to Portland and up along the river to the Delaware Water Gap.

There is construction work on the Slate Hill road between Goshen and Port Jervis. This necessitates a long detour. If the shore route is preferred, after leaving Goshen continue on through Middletown and Cuddebackville, then down the Navesink Valley to Port Jervis.

Boston, Philadelphia and Chicago can boast of their wonderful park systems through which motorists enter and leave. New York will soon have an extension to its park system that will provide an entrance or exit to Westchester county, connecting with all the trunk lines leading to New England and to northern New York. The Bronx River Parkway will start from the end of the Mosholu Parkway in the Botanical Gardens and go north, following the Bronx River through Woodlawn, Mount Vernon, Scarsdale, Hartsdale and White Plains to the foot of the Kensico Dam. There is a 20-foot concrete road finished from the Gun Hill road to Woodlawn and from Woodlawn to Mount Vernon. Just as soon as the bridge is finished on the south side of Gun Hill road in the Botanical Gardens—which will be within the next thirty days—the parkway will be opened to the public as far as Mount Vernon.

The Saw Mill River road is under construction between Yonkers and Ardsley. There is also construction on the main trunk line to the Berkshires in Briarcliff Manor between the church and drug store. Motorists going through to Pawling and the Berkshires will find the preferable way via White Plains, Armonk, Bedford, Goldens Bridge and Brewster. To reach Briarcliff Manor follow Broadway all the way to Scarsborough Church, then turn east to Briarcliff. Motorists following Broadway and the Albany Post road will find Broadway from Yonkers on much more interesting than Warburton avenue and free from trolley car congestion. After passing through Getty square continue on Broadway by turning right up short hill, then on through Hastings, Longue Vue, Dobbs Ferry, Irvington and Tarrytown.

Bridges are about completed at Scarsdale and Hartsdale, and it is hoped that the Park Commission will soon start the building of the road from Mount Vernon to White Plains and from White Plains to the Kensico Reservoir.

There are no more trolley cars on Jerome avenue from Central Bridge to Woodlawn Cemetery. Motorists going to the Empire track, White plains and points beyond can run to Central Bridge, which was formerly the Old McCoombs Dam Bridge, and follow Jerome avenue all the way to Woodlawn Cemetery without encountering any surface cars.

There is a bad stretch of road between Jericho and Westbury on the Jericho Turnpike. This is under the jurisdiction of the Nassau County Road Commissioner and the Nassau County Board of Supervisors.

There is good reason to expect that the bridge across the East Chester Creek on the Old Boston Post Road will be finished by the touring season of next year.

COLE MOTOR CO. HAS VIGOROUS SALES PLAN

J. H. McDuffee, who has recently become first assistant to the head of the Cole Motor Car Company, announced yesterday that Homer McKee, formerly in charge of Cole sales and advertising, has been appointed advertising counsel to the Cole organization and will handle Cole advertising through the Homer McKee Advertising Company of Indianapolis.

Simultaneously the appointment of Charles S. Crawford, formerly chief engineer of the Cole Motor Car Company, as engineering consultant to the Cole organization, is announced by J. J. Cole, the president. This, on the heels of the recent acquisition of J. H. McDuffee as assistant general manager of the Cole company, is generally accepted as meaning that, in the opinion of J. J. Cole, the moment has finally arrived for a resumption of vigorous and energetic business policies.

It is the opinion of the Cole Motor Car Company that the mental and monetary attitude of the country now warrants a cessation of the rigid retrenchment policy which has been mercilessly enforced during the past few months. The fact that the Cole chief official sees fit now to assume an energetic manufacturing and sales policy is regarded by those who have carefully watched Cole strategy over a period of years as highly significant, particularly since J. J. Cole's vision has been commented upon in business circles as being prophetic all during the fast moving business sequences brought about by the war and its aftermath.

JAPAN'S NARROW ROADS BOTHER AUTOISTS

When Charles B. Warren, lately appointed Ambassador to Japan, opened negotiations for the Embassy's motor equipment he found unexpected difficulties in his way. Automobile men with export experience told him that a limousine of a standard American make would not do. For Tokio's streets are narrow and her many bridges are of light bamboo, amply strong to carry the lighter burdens that make up the traffic of the little men of Nippon, but never intended to carry a big American car and its burden of seven full sized white men.

Col. Warren will use an American car, a Paige 6-44. The chassis is already well on its way across the Pacific, but the body will be Tokio built of a size and weight to come within the requirements of Japan's traffic regulations. The new car will be generously large for the Embassy's Japanese guests, though the Colonel will find it a bit tight should he have occasion to offer three or four Caucasian friends a ride together.